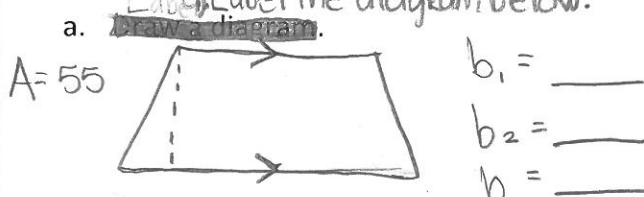


1) The area of a trapezoid is 55 square inches. The length of the shorter base is 10 inches and the height is 5 inches. Label the diagram below.



b. Write the formula for the area of a trapezoid.

$$A = \left( \frac{b_1 + b_2}{2} \right) h$$

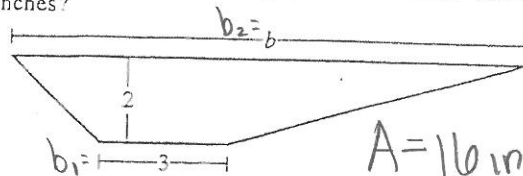
c. What is the length of the other base?

(Solve for  $b_2$ )

$$55 = \left( \frac{\underline{\hspace{2cm}} + b_2}{2} \right) \underline{\hspace{2cm}}$$

2)

The area of the trapezoid below is 16 square inches, the altitude is 2 inches, and the length of one base is 3 inches. What is the length,  $b$ , of the other base, in inches?



$$A = 16 \text{ in}^2$$

a. Solve for the unknown base. (Solve for  $b_2$ )

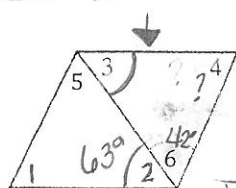
$$16 = \left( \frac{3 + b_2}{2} \right) 2$$

$$b_2 = \underline{\hspace{2cm}}$$

b. Check that your answer is correct with "proof" from the formula for the area of a trapezoid. (Plug  $b_2$  back in to the formula)

3) In the parallelogram below, a diagonal is shown and  $\angle 2$  measures  $63^\circ$  and  $\angle 6$  measures  $42^\circ$ . What is the  $m\angle 4$ ?

$$\angle 3 \cong \angle 2$$

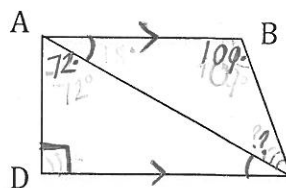


$$180 = \angle 3 + \angle 4 + \angle 6$$

$$180 = (63) + \angle 4 + (42)$$

$$\underline{\hspace{2cm}} = \angle 4$$

4) In the trapezoid ABCD shown below, side lengths AB and DC are parallel,  $\angle DAC = 72^\circ$ ,  $\angle D = 90^\circ$ , and  $\angle B = 109^\circ$ . What is the measure of  $\angle BCA$ ?



$$180$$

$$- 72$$

$$- 90$$

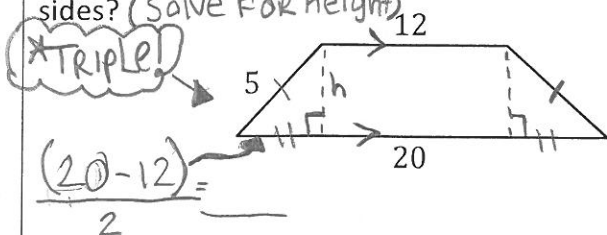
$$= \angle DCA \cong \angle BAC$$

$$180$$

$$- 109$$

$$= \angle BCA$$

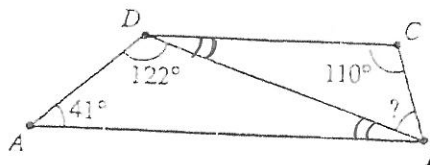
5) The parallel sides of the isosceles trapezoid shown below are 12 feet long and 20 feet long, respectively. What is the distance, in feet, between these two sides? (Solve for height)



$$h = \underline{\hspace{2cm}}$$

6)

In the figure below,  $\overline{AE} \parallel \overline{DC}$ ,  $\angle A$  measures  $41^\circ$ ,  $\angle C$  measures  $110^\circ$ , and  $\angle ADB$  measures  $122^\circ$ . What is the measure of  $\angle CBD$ ?



$$180$$

$$- 41$$

$$- 122$$

$$= \angle ABD \cong \angle CDB$$

$$180$$

$$- 110$$

$$= \angle CBD$$

$$\underline{\hspace{2cm}} = \angle CBD$$